UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

JUL 14 1998

Mr. Dana S. Myers
President
S. D. Myers Incorporated
180 South Avenue
Tallmadge, Ohio 44278

Dear Mr. Myers:

The National Program Chemical Division (NPCD) grants renewal of the PCB disposal approval subject to the Toxic Substances Control Act (TSCA). The approval, entitled "Approval to Dispose of Polychlorinated Biphenyls (PCBs)," permits Transformer Consultants, a Division of S. D. Myers Incorporated to chemically destroy PCBs in: (1) mineral oil dielectric fluid (MODEF) at concentrations not exceeding 3,300 parts per million (ppm) PCBs, and (2) other oils containing less than (<) 500 ppm PCBs, using the "PCB-Gone" Process, subject to the listed conditions of approval. This approval is issued pursuant to Section 6(e)(1) of the Toxic Substances Control Act (TSCA) of 1976 (Public Law 94-469), and its implementing regulations, 40 CFR Part 761.60(e) (48 FR 13185, March 30, 1983).

For the purpose of renewing the approval, NPCD completed a laboratory audit of the PCB disposal facility on December 5, 1997. Based on the findings from the audit, S.D. Myers must follow procedures in EPA Method 8080 or equivalent, or the updated Method 8082, whenever confirmatory analyses are performed to comply with the PCB Disposal Approval. This procedure must use the ten-homolog standard using congeners from mono- to deca-chlorinated biphenyls.

In this approval, NPCD limits the PCB level in the untreated MODEF to a maximum concentration of 3,300 ppm. The PCB concentration in other oils that Transformer Consultants treats must be less than 500 ppm. These restrictions prohibit Transformer Consultants from treating MODEF or other oils that contain a higher concentration of PCBs. Transformer Consultants may not blend PCB-laden MODEF or other oils to reduce the PCB concentration to within the maximum permissible concentration for treatment.

The approval restricts the disposal of spent reagent to EPA-approved PCB disposal facilities. NPCD amended the approval based on data from the PCB disposal demonstration performed at

HDodohara:hd/OPPT-NPCD-FOB/6-12-98/7404/260-3959/Rm ET837/D10:"PERM-98.WP6"
OB Chron:Reading File/DS File/Subject File/Author File
permit, renewal, dechlorination, mobile

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CONCURRENCES

SYMBOL	7404	7404						

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the Vanalco facility, Vancouver, Washington in August 1993. Information from the demonstration indicates that spent reagent streams contain PCBs in concentrations greater than 2 ppm. Information on analytical procedures used in the analysis of split samples collected by EPA and S.D. Myers indicate that analytical methodologies yielded similar results. However, S.D. Myers' laboratories limited the analytical scope to two homologs, i.e. the tetra- and penta-chlorinated congeners. EPA defines all chlorinated congeners as PCBs; therefore, the analysis of PCBs must consider all of the chlorinated congeners. A discussion of this issue is included in Appendix 4 of the Enclosure. In conjunction with this restriction, each batch of Fullers Earth filter media must be analyzed for PCBs. Any batch containing over 2 ppm PCBs must be disposed of in an EPA-approved PCB disposal facility.

The advance notification procedure is designed to facilitate the inspection of mobile operations by EPA authorized inspectors. When mobile units such as the PCB Gone change operating sites frequently, the EPA inspectors must have updates, sometimes as frequent as hourly, to perform unannounced inspections. EPA Headquarters has been notified by its Regional Offices that mobile units were not at the sites as notified. To preclude such incidents, EPA has imposed requirements to submit two-week activity schedules by telephone facsimile transmission on a weekly basis and to operate a recorded message system accessible to EPA 24 hours a day. However, because S.D. Myers has no units currently operating in the United States, and plans to operate only a single unit when such operations resume, EPA deletes the requirement for S.D. Myers to operate a recorded message system. But S.D. Myers must notify EPA Regional Offices of a change in schedule by 8:30 am of the next day after the schedule change. However, when S.D. Myers resumes operations with two or more units, the company shall install and operate a recorded message system. The advance notification includes a section which applies to your mobile unit if the operations extended at a single site for longer than 180 days. This section is included in Section C, Permanent Operations.

Condition 2 (e) requires S.D. Myers to label process and storage vessels only belonging to S.D. Myers. Clients' vessels do not require labeling by S.D. Myers, under terms of this approval. Condition 5 adds two requirements for final disposition of process waste streams. Samples collected from the process streams in 1988 and 1993, indicated over 2 ppm PCBs in the spent reagent. Therefore, the spent reagent shall be disposed of in EPA-approved PCB disposal facilities. Spent Fuller's Earth sample collected in 1993 indicated over 2 ppm PCBs. Therefore, S.D. Myers must confirm each batch of Fuller's Earth to contain PCBs below 2 ppm. If the Fuller's Earth filter media contains over 2 ppm PCBs, the media must be disposed of in an EPA-approved PCB disposal facility.

Condition 7 requires notification of a PCB release within 2

notification forms in the Appendices are only suggested forms, not a requirement for use.

This approval shall be effective on June 20, 1998 in all ten EPA Regions and shall extend to December 31, 2003. In the event that S.D. Myers submits rationale, acceptable to EPA, that EPA's analytical results on the spent reagent are inaccurate, EPA will develop and impose amendment(s) suitable to both EPA and S.D. Myers to resolve any differences.

This approval supersedes all previous EPA Headquarters and Regional approvals or amendments thereof for the Transformer Consultants' PCB Gone process. This approval may be modified, suspended, terminated, or further conditions may be added to it at anytime EPA has reason to believe that operation of Transformer Consultants' process presents an unreasonable risk of injury to health or the environment or after EPA promulgates new or modified regulations concerning this disposal process. Suspension or termination of the approval or imposition of further conditions may also result from future EPA rulemaking with respect to PCBs. Moreover, violation of any condition included as part of this approval may subject Transformer Consultants to enforcement action and/or suspension or termination of this approval.

This approval is based upon the ability of Transformer Consultants' process to destroy PCBs to a level below 2 parts per million (ppm) per resolvable gas chromatographic peak with no detectable PCBs in air emissions or releases to water. (The 2 ppm level was chosen because it is the Environmental Protection Agency's (EPA) designated limit of detection of PCBs in oil.) In addition, the approval is based upon the Agency's conclusion that Transformer Consultants' process when operated in accordance with the conditions of approval, does not present an unreasonable risk of injury to health or the environment.

You should advise your customers that if MODEF is returned to a transformer after being successfully treated by the Transformer Consultants' process, and the transformer cannot be reclassified unless the dielectric fluid is tested following a minimum of three months of in-service use. In-service use is defined as use under electrically loaded conditions that raise the temperature of the dielectric fluid to at least 50° Centigrade. [Please refer to Title 40 of the Code of Federal Regulations Section 761.30(a)(2)(v)].

Approval for treating higher concentrations of PCBs in MODEF or other oils may be considered by EPA when Transformer Consultants demonstrates such capability to the satisfaction of EPA. Such a demonstration may be accomplished either during commercial processing or through other controlled experimentation with the prior approval of EPA. Authorized EPA

representatives may be present to witness the demonstration and obtain split samples for verification of analytical results.

It is the responsibility of you and your company, Transformer Consultants, to comply with all applicable provisions of the Toxic Substances Control Act (TSCA) and the Federal PCB regulations in processing the PCB-containing MODEF or other oils. Violation of any of the applicable provisions and the conditions of approval may be cause for suspension or revocation of this approval. Furthermore, this approval does not relieve you of any responsibility to identify and comply with all other applicable Federal, State and local regulations and ordinances for transportation, siting, operation, and maintenance of Transformer Consultants' mobile unit(s).

S.D. Myers currently has no PCB-Gone units operating, in the United States. Prior to resumption of operations in the U.S., S.D. Myers must notify the EPA Fibers and Organics Branch at least 30 days before beginning operations. EPA may select to audit the dechlorination and analytical procedures during the initial operations after resumption of operations.

EPA reserves the right to inspect Transformer Consultants' mobile unit(s) to be used for the disposal of PCBs, and the records which Transformer Consultants is required to maintain under the Federal PCB regulations and conditions of this approval during operation and at other reasonable times. Please contact Hiroshi Dodohara of my staff at (202) 260-3959 if you have any questions regarding this approval.

Sincerely,

John W. Melone, Director
National Program Chemical Division

Enclosures

cc: Regional PCB Coordinators
EPA Regions I-X

Priscilla Fonseca
EPA Region V

Enclosure 2

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

IN THE MATTER OF	)	APPROVAL TO DISPOSE
	)	
TRANSFORMER CONSULTANTS	)	OF POLYCHLORINATED
	)	
DIVISION OF S.D. MYERS,	)	BIPHENYLS, (PCBs)
	)	
INCORPORATED	)	
	)	
TALLMADGE, OHIO	)	

AUTHORITY

This approval is issued pursuant to Section 6(e)(1) of the Toxic Substances Control Act of 1976, Public Law No. 94-469, and the Federal PCB Regulations, 40 CFR 761.60(e) (48 FR 13185, March 30, 1983).

EFFECTIVE DATES

This approval to operate nationwide shall become effective on June 20, 1998 and shall expire on December 31, 2003. This approval supersedes all EPA regional permits held by Transformer Consultants, Division of S.D. Myers, Incorporated, for the "PCB-Gone Process."

DEFINITIONS

"Analytical data" means (a) a formal report from a chemical analysis laboratory or (b) appropriate chemical instrument print outs with appropriate controls, standards, and written instrumental operating parameters and conditions or © a statement that the "assumption" rule has been used. Technical judgement or experience is not considered analytical data.

"Appropriate local jurisdiction" means the incorporated city where the PCB-GONE unit will be operated, or the county, if the PCB-GONE unit will be operated outside the boundary of an incorporated city.

"Business hours" means 8:00 a.m. to 5:00 p.m. local time on weekdays except United States Government Holidays.

"Change in scale" means: (a) a doubling or more of the volume of Waste Feed notified to be treated at a site, if the increase is greater than 2000 gallons; or (b) for amounts of PCBs to be treated at a site greater than 5 pounds, an increase of the amount of PCBs to be treated by one order of magnitude or more.

"Day" means a calendar day, unless otherwise specified.

"Duplicate analysis" means two gas chromatographic analyses of the analyte prepared from one sample of MODEF or other material.

"Frequent site changes" means site changes at a rate of more than once per week.

"High PCB levels" means PCBs at a concentration greater than 6,300 parts per million (ppm).

"Job" means all PCB-GONE disposal operations for a single customer within fifty road miles of a central location. A job may consist of PCB-GONE disposal operations at several different sites for a single customer.

"Lifetime exposure risk" means the risk to an average adult individual who is exposed to a stated average concentration of a toxic material daily over the course of a 70 year lifetime.

"Lost time injury" or "Lost workday injury" means an injury related to the operation of the PCB-GONE process which results in an employee not performing his/her normal assignments during the workday and/or any successive workday(s) following the day of the injury.

"Major modification" means any change to capacity, design, or efficiency of the PCB-GONE unit or process, change of waste type, or any other changes significantly affecting overall performance or environmental impact.

"Minimal," with regard to an amount of PCB wastes means less than ten percent (10%) of total wastes treated.

"Mobile operations" means those operations where the PCB-GONE mobile unit remains at a site for less than 180 consecutive days.

"Operations" means the process of treating PCBs, including set up and take down of the PCB-GONE unit as well as actual treatment.

"OPPTS" means the Office of Toxic Substances (TS-792); (202) 382-3815; Fibers and Organics Branch (7404); (202) 382-3933; Facsimile (202) 260-1724.

"PCB" means polychlorinated biphenyls as defined in 40 CFR 761.3.

"PCB release" and "PCB spill" have the same meaning as "spill" as defined in EPA's PCB Spill Cleanup Policy in 40 CFR 761.123.

"Permanent operations" means those operations where the PCB-GONE mobile unit remains at a site for 180 consecutive days or longer.

"Process Failure" means the inability of the PCB-GONE unit to treat the feedstock for reasons other than contaminants in the MODEF or other oil (such as chlorinated solvents).

"Site" means the geographically contiguous property unit (such as a single manufacturing plant) at which the PCB-GONE disposal operations are conducted. More than one transformer may be serviced at a single site.

"Site location" means a street address or a directional description which would allow a site to be found by an EPA inspector.

"Year" means 365 days.

CONDITIONS OF APPROVAL

1. Advance Notification

a. Overview.

Transformer Consultants shall provide a nonconfidential, advance written notification of intent to operate to be received by the addressees (as described below) prior to the conduct of a permitted PCB disposal activity. The addressees shall include, at a minimum: EPA Headquarters' Office of Toxic Substances (Mail Code: 7404), the appropriate EPA regional office, the appropriate state agency, and the appropriate local jurisdiction.

The written advance notification requirements are divided into two categories based on the length of time Transformer Consultants is at a single site. In general, categories are defined below and advance written notification requirements follow:

Mobile Operations

Those operations where the PCB-Gone unit remains at a site for less than 180 consecutive days.

Permanent Operations

Those operations where the PCB-GONE unit remains at a site for 180 consecutive days or longer.

The information which must be included in the advance written notification for each category is described in sections 1.b.- d. below. Advance notification requirements may be waived at Superfund sites according to § 121(e) of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and its implementing provisions at (40CFR 300.400(e).

b. Mobile Operations

(1) The following information must be included in a 30-day advance written notification to the addressees required to be notified under 1.a. The information is provided for public information purposes and for facilitating scheduling of government compliance monitoring and oversight of PCB disposal operations.

A. Company identification: Transformer Consultants's and client contacts' name and telephone number.

B. Names, titles, addresses, and telephone numbers of the addressees required to be notified by 1.a.

C. The nature of the PCB disposal activity, including estimates of the amount and type (e.g., MODEF (mineral oil dielectric fluid), hydraulic oil, heat transfer oil) of PCB material to be treated and estimates of the concentration of PCBs in the material. The estimates shall be based on any one or combination of the following:

   I. Analytical data or the results of analytical data provided by the customer; or

   ii. Transformer Consultants analytical data; or

   iii. A statement that the customer has applied the "assumption rule" codified at 40 CFR 761.3 defining PCB-Contaminated Electrical Equipment.

D. The site location(s) and a telephone contact(s).

E. The time(s) and date(s) the PCB disposal activity is scheduled to take place.

An acceptable sample form for the 30-day advance written notification of intent to operate under mobile operations is included as Appendix III A.

(2) For PCB-GONE operations under Mobile Operations where there are frequent site changes, the following additional notification is required:

A. Every week, Transformer Consultants shall provide by telephone facsimile transmission, a two-week activity schedule to the OPPTS and the EPA regional contact for each region where a PCB disposal activity will occur. This two-week activity schedule shall include for each job:

   I. EPA region where the PCB-GONE unit will be located;

   ii. Most probable date that the PCB-GONE unit will be performing PCB disposal activities;

   iii. The time(s) and date(s) the PCB disposal activity is scheduled to take place;

   iv. The expected number of sites; and

v. Either:

(a) the county or counties where PCB disposal activities will occur, or

(b) a notice that the PCB-GONE unit will operate within a 50-mile radius of a specific location identified by a client, telephone contact and client address.

An acceptable sample form for the two-week activity schedule under mobile operations is included as Appendix 5B.

B. If a change in the most probable operating date or a change in scale for a job is made more than 2 days in advance of the most probable operating date, as stated in the most recent two-week activity schedule transmitted to EPA, Transformer Consultants must send a telephone facsimile message noting the change to the appropriate EPA regional contact at least 2 days in advance of the most probable operating date, as stated in the two-week activity schedule.

If the change in the most probable operating date or the change in scale is made 2 days or less in advance of the most probable operating date, as stated in the most recent two-week activity schedule transmitted to EPA, then the next scheduled telephone message update shall include the change.

C. Transformer Consultants shall operate a recorded message system accessible 24 hours a day by EPA Regional Compliance Monitoring staff and OPPTS staff. The recorded message must include the following information for each of Transformer Consultants's PCB-GONE operations in the United States:

I. site location (street address or directional description), client contact and phone number;

ii. scheduled completion date of current job; and

iii. company identification and scheduled start date of next job.

The message shall be updated daily between 7:30 a.m. and 8:30 a.m. EST/EDT and between 4:30 p.m. and 5:30 p.m. EST/EDT on weekdays (except for

official U.S. Government holidays). If this recorded message is considered confidential business information, the message may be accessed by a code distributed to the EPA regional contacts and OPPTS officials below.

D. Transformer Consultants shall notify EPA whenever operations in the United States with the PCB-Gone unit(s) resumes. Currently the company has no units operating in the United States, and plans to operate only a single unit when such operations resume. Therefore, EPA deletes the requirement for Transformer Consultants to operate a recorded message system. However, when Transformer Consultants resumes operations with two or more units, the company shall install and operate a recorded message system. But when operations resumes, Transformer Consultants must notify EPA Regional Offices of a change in schedule by 8:30 am of the next day after the schedule change.

Samples of acceptable forms for the required notifications under Mobile Operations are included in Appendix 5. Other forms providing equivalent information may be used.

Name, Region	Telefax Number	Contact Number
Kim Tisa	(617) 565-4939	(617) 565-3257
Dan Kraft, Region II	(908) 321-6788	(908) 321-6669
Ed Cohen, Region III	(215) 597-3156	(215) 597-7668
Stuart Perry, Region IV	(404) 347-1681	(404) 347-1033
Priscilla Fonseca, Region V	(312) 353-4342	(312) 886-1334
Lou Roberts, Region VI	(214) 665-7446	(214) 665-7579
Dave Phillippi, Region VII	(913) 551-7065	(913) 551-7359
Dan Bench, Region VIII	(303) 293-1229	(303) 312-6027
Yosh Tokiwa, Region IX	(415) 744-1073	(415) 744-1109
Dan Duncan, Region X	(206) 553-8509	(206) 553-6693

c. Permanent Operations

Transformer Consultants must submit an advance written notification of permanent operations to the addressees at least 180 days in advance of the proposed Permanent Operations at a site. When an Transformer Consultants PCB-GONE unit is to be operated at a site for 180 consecutive days or more, the following information must be included in the notification and verified by EPA to conform to the informational requirements before the 180-day review period can begin. This advance written notification shall include a site evaluation and must include the following:

(1) All information required under items 1.b.(1) through (5) of Mobile Operations.

(2) Additional information presented below:

A. estimates of fugitive emissions of PCBs and any other hazardous materials;

B. amounts of waste generated during the entire operation and how that waste will be disposed;

C. plans of action in case of an emergency (including arrangements with local fire fighters, law enforcement personnel, and public health officials);

D. site-specific spill prevention control and countermeasures (SPCC) plan or containment installations and procedures; and,

E. site cleanup or restoration procedures and copies of any bonds which may be required by a state or local authority or by the client for the Transformer Consultants operations.

(3) Details of the Site Evaluation

The following information must be submitted to OPPTS and the appropriate EPA region as part of a notice of intent to operate a permitted mobile disposal unit (MDU) at a site for 180 consecutive days or longer. A public notice will not be published until a complete submission of these requirements has been received and approved by EPA.

There are a number of details which were submitted to EPA as part of the original PCB disposal permit application which must be updated or revised. All of these details are directly or indirectly related to the site of operations.

A. Project Personnel

A list of names and an organizational chart, brief job description, and responsibilities for all staff to be employed by the permittee at the proposed site. In addition, names, mailing addresses, and telephone numbers of primary Transformer Consultants contacts with EPA, such as environmental affairs managers or government liaison contacts. Job qualifications and training, including the time, frequency and content, must be included.

B. Facility Description

The facility description shall include details of the disposal operations as they apply to the physical layout at the disposal site. To be included are (1) a site layout, to scale, of the location where operations will occur, and (2) the location of safety equipment, including but not limited to fire protection equipment, disposal equipment, supplies, waste handling equipment, waste loading and unloading points for transportation, flood proofing protection structures, security structures.

If the disposal operation will be at a previously developed site, in addition to the above requirements, other site modifications must be described and justified. Buildings for personnel, construction, maintenance and laboratories are exempted, unless there are discharges from operations of a mobile unit to the environment. Laboratory vents, sewer discharges from the laboratory or any area that may be associated with any contact with PCBs or any hazardous waste handled or generated as the result of PCB disposal must be discussed. Also, discussions of all storage facilities and their containment, process water systems, and other waste stream processing shall be included.

C. Disposal Activities to Be Conducted On-Site

A summary of the process operations which are described in detail in the original permit application shall be submitted, not to exceed one typewritten single spaced page. The permittee shall discuss activities and the amount of time involved in setting up and taking down disposal operations of the MDU at the site. Also, the permittee shall provide a discussion of: monthly and annual amounts and concentrations of waste and amount of PCBs to be processed; amounts and concentrations of PCBs and other hazardous materials stored on site; amounts and concentrations of contained, controlled, and fugitive emissions of toxic and non-toxic materials and how contained materials will be disposed of; proposed hours of operations; and expected duration of disposal activities at the site.

D. Safety Measures

The permittee must describe systems and/or structures for the detection and/or containment of

leaks and hazardous wastes/by-products must be described, including process shutdowns resulting from automated monitoring of process emissions. A brief discussion of the automatic process controls, such as those which control extreme temperature and pressure fluctuations or departure from a permitted range, must be included. The location and action plans for all other emergency equipment shall be provided. Maintenance plans and schedules shall be provided. Safety and/or quality control/quality assurance inspection schedules, procedures, and recordkeeping must be detailed.

E. Emergency Preparedness and Contingency Plans

Emergency preparedness plans must be submitted to local authorities and approved by the EPA region. These plans shall include (1) exactly what actions take place for each level of problem, (2) the names of the persons responsible for handling expected problems, and (3) facility personnel names and appropriate phone numbers for 24-hour a day contact in the event of an emergency. Frequent problems and reasonable worst case problem scenarios such as: spills during processing, storage, and transportation; fires; floods; and equipment malfunction resulting in personal injury must be addressed. The information shall include (1) names and phone numbers of fire, police, medical emergency contacts, and (2) training sessions, documents, or other information provided to these services.

F. Transportation Routes and Volumes to be Transported to the Site

Transportation route information shall be detailed if such routes include any roads other than interstate highways. Information shall include residential or commercial areas associated with the roads to be used by hazardous waste transporters. Amounts, volumes, and locations of off-site PCB materials which are proposed to be transported to the PCB disposal site shall be listed. Information on the off-site and on-site storage of the off-site materials (including but not restricted to location, brief description of the release control/containment measures at the storage facility, and the estimated time to be stored at the location), shall also be listed.

G. Financial Assurance and Closure

The permittee shall summarize the financial assurance and closure provisions from the permit application including what situations are covered by insurance or other financial assurance and the amount of the assurance. Additional financial assurance and closure provisions for the time of extended PCB disposal operations at the site must be described in detail.

H. Exposure Assessment

An exposure and risk assessment shall be provided for activities included in normal operations and in the event of reasonable worst case accidents/problems. The exposures shall include those resulting from: storage, contained and fugitive emissions, handling and processing PCBs and other hazardous waste/process materials, operation of industrial equipment, and transportation related releases such as spills and collisions.

The information shall include an assessment of risk to the public from:

I. lifetime exposure to process operations;

ii. the transport of PCB waste to the site; and,

iii. on-site storage of PCB waste for disposal.

Situations which are not considered reasonable worst case situations are a double tornado, a terrorist attack, a nuclear strike, a plane crash into the facility, a meteor strike, and damage from an earthquake when there is not an active major geological fault near enough to expect major plant facility damage and release of PCB material.

(4) Public Participation

Transformer Consultants shall provide public notice in the local newspaper initiating a 30-day comment period for public review of appropriate permit related documents (such as the sanitized non-confidential business information) permit application, any existing PCB disposal permit, any existing draft revised PCB disposal permit, and the site evaluation). The notice shall also advise that, if EPA determines that there is sufficient public interest, a public meeting will be held on a

specified date and at a specified place and time not more than 45 days after the initial public notice.

After Transformer Consultants has given the EPA regional office, the state agency, and the local jurisdiction a notice of intent to operate at a site for at least 180 consecutive days or more, and once OPPTS and the local EPA region are satisfied that the site specific information submitted in this notice meets the requirements set forth in paragraphs (1), (2) and (3) above, a 180-day public notification and review process shall begin.

Based on the comments and questions received during the 30-day comment period, the EPA region will determine whether a public meeting is necessary. The public meeting shall be held: (a) to discuss comments made by the public during the 30-day comment period and notification for the public meeting; (b) to allow the public to make comments on the proposed operations and site; and © to allow the public to ask questions of EPA representatives on the proposed operations.

The public meeting will be hosted by the EPA region. OPPTS and the EPA region may collectively determine what the schedule and the agenda for the public meeting shall be.

Not more than 150 days after the close of the public comment period, EPA shall make a decision on the authorization of Permanent Operations and on what additional conditions, if any, shall be imposed on the Transformer Consultants Permanent Operations. The decision will be based on review of comments during the 30-day comment period and comments made during the public meeting. The decision could be that Transformer Consultants may begin operations without additional permit conditions, or the decision could be made to require additional site-specific permit conditions which must be met before Permanent PCB Disposal Operations may begin at the site.

d. <u>Requirements for Changing from Mobile Operation Mode to Permanent Operation Mode</u>

Whenever a PCB-GONE unit originally projected to be located at a single site for less than 180 consecutive days as Mobile Operations, at some point before 180 consecutive days into the operations Transformer Consultants determines that the unit will be located at the site for 180 consecutive days or longer, Transformer Consultants must proceed as follows:

(1) Transformer Consultants must immediately provide written and telephone notification of this change to the EPA Headquarters' Office of Toxic Substances (OPPTS) and the appropriate EPA regional office.

(2) Upon submission of this notification, Transformer Consultants shall cease PCB disposal operations after the 180th consecutive day unless Transformer Consultants provides OPPTS and the EPA regional office a site evaluation, which includes all information prescribed in sections c.(1) - (3) above. The information must include updated material for the operation in question, including any modifications, to allow EPA to consider operations for the time period beyond the 180 consecutive days.

(3) Upon review and acceptance of the site evaluation, Transformer Consultants must provide for public notice of the application for approval and a 30-day comment period along with an opportunity for a public meeting or hearing as described in section 1.c.4 above.

(4) When the comment period is concluded, OPPTS and the regional office will determine, in its discretion, that operations may proceed beyond 180 consecutive days. EPA will notify Transformer Consultants in writing of its approval to operate beyond 180 consecutive days.

2. Feedstock Quality and Restrictions: The Transformer Consultants Mobile PCB-Gone process, as described in the design drawings and explanations on file in the Office of Pollution Prevention and Toxic and as demonstrated to EPA in May 1985, September 1985, and again, for permit renewal in June 1988 and October 1993, may be used by Transformer Consultants to destroy PCBs in MODEF and other oils. This approval is limited to using a single proprietary reagent in the Transformer Consultants process. Although Transformer Consultants demonstrated another proprietary reagent in the May 1985 demonstration, this reagent is not permitted for use in the Transformer Consultants process. The concentration of PCBs in MODEF shall not exceed 3,300 ppm. The concentration of PCBs in other oils shall not exceed 500 ppm.

Whenever feedstock is required to be handled through an intermediate tank(s) such as in treatment of large bulk quantities of oils, the intermediate tanks must be clearly labeled as to purpose. As an example, feed tank must be labeled as such, as distinguished from product tanks or in-process holding tanks. These tanks must be labeled, for instance, "FEED TANK," "PRODUCT TANK," and "IN-PROCESS HOLDING TANK." The requirement for labeling will clearly separate feed material from in-process material from finished product so that EPA inspectors and auditors may readily confirm by sampling and analysis that PCB feed materials are being properly disposed of.

Transformer Consultants may not blend PCB-laden MODEF or other oil to reduce the PCB concentration prior to treatment. Prior to treatment, the MODEF or other oil must be sampled and analyzed by gas chromatography for the concentration of PCBs in accordance with EPA-approved procedures for PCB Gone December 1984 application approved by EPA.

Should Transformer Consultants successfully demonstrate to EPA through controlled experimentation that the Transformer Consultants PCB-Gone is capable of treating higher concentrations of PCBs in MODEF or other oils, this condition may be modified accordingly. Authorized EPA representatives may witness the demonstration and obtain split samples for verification of analytical results.

3. Process Control: A sample from each run of treated MODEF or other oil must be drawn and, analyzed in duplicate (i.e., duplicate analysis) by gas chromatography for the concentration of PCBs at the site where the Transformer Consultants PCB-Gone unit is being used. The analytical procedure must be that demonstrated during the June 1988 demonstrated by the Transformer Consultants mobile PCB-Gone laboratory.

If the concentration of PCBs in the treated sample is 2 ppm or greater per resolvable gas chromatographic peak (as calculated by comparison to an external standard homolog peak having the nearest retention time to each appropriate PCB peak to be quantified), the fluid must be reprocessed and analyzed to show less than 2 ppm per resolvable gas chromatographic peak (according to the aforementioned method and procedures) before the next run is begun or the fluid must be handled as if it contained PCBs at the level in the original fluid.

When Aroclor patterns are detected in the chromatograms of treated MODEF or oil, then if the concentration of PCBs in the treated sample is 2 ppm or greater per resolvable gas chromatographic peak (as calculated by comparison to an external standard homolog peak having the nearest retention time to each appropriate PCB peak to be quantified) or if the Aroclor level, (total PCBs concentration) is greater than 2 ppm, the fluid must be reprocessed and reanalyzed to show less than 2 ppm per resolvable gas chromatographic peak (according to the aforementioned method and procedures) before the next run is begun or the fluid must be handled as if it contained PCBs at the level in the original fluid.

Transformer Consultants must follow procedures in EPA Method 8080 or equivalent, or the updated Method 8082, whenever confirmatory analysis are performed to comply with the PCB Disposal Approval. This procedure must use as analytical standard, the ten-homolog standard using congeners from mono- to deca-chlorinated biphenyls.

4. Process Waste Restrictions: All wastes generated by the Transformer Consultants PCB-Gone process using the single proprietary reagent and which were demonstrated to EPA in May 1985 and June 1988, to contain 2 ppm or more PCBs per resolvable gas chromatographic peak must be disposed of as if the waste stream contained the original PCB concentration present in the feedstock. All wastes generated by the PCB-Gone unit(s) treatment of MODEF, or other oils must be treated in the following manner.

a. Waste centrifuge sludge, regardless of the PCB concentration, must be disposed of as if the waste stream contained the original PCB concentration present in the feedstock.

b. Waste streams arising from the treatment of MODEF or other oil containing less than 500 ppm PCBs must be disposed of in a 40 CFR 761.60 high efficiency boiler (liquids only); a 40 CFR 761.70 incinerator; a 40 CFR 761.75 chemical waste landfill; or an approved 40 CFR 761.60(e) alternative method, as specified in the PCB regulations and individual PCB disposal approval.

c. Waste streams arising from the treatment of MODEF containing 500-3,300 ppm PCBs must be disposed of in a 40 CFR 761.70 incinerator, or an approved 40 CFR 761.60(e) alternative method.

d. Spent reagent from an operation may be reused in subsequent approved PCB disposal operations performed; however, upon termination of useful life, the spent reagent must be disposed of by incineration or landfilled in EPA-approved facilities for the disposal of PCB wastes.

e. Spent Fullers Earth not analyzed for PCB content must be disposed of as if it contained the original PCB concentration of the feedstock. Spent Fullers Earth analyzed and containing greater than 2 ppm PCBs must be disposed of as if it contained the original PCB concentration of the feedstock.

f. Any future process waste streams which, upon analysis, are found to contain 2 ppm or greater PCBs per resolvable gas chromatographic peak, even though these same waste streams may have been demonstrated to EPA in May 1985 and September 1985 to contain less than 2 ppm PCBs, must be either reprocessed and the PCB concentration reduced to below 2 ppm per resolvable gas chromatographic peak or disposed of as if the waste stream contained the original PCB concentration present in the feedstock.

5. Process Monitor/Recordkeeping: Provisions must be made to assure that the following process elements are suitably monitored

and recorded for all PCBs processed, such that materials harmful to health or the environment are not inadvertently released:

a. quantity and concentration of PCBs and other raw materials (i.e., feedstock and chemical reagents) fed into the Transformer Consultants mobile system;

b. quantity and PCB concentration of treated fluid produced including wastes (the method of disposal and location of the disposal facility for each waste should be documented);

c. temperature and pressure of reaction at least once during every half hour interval;

d. date, time and duration of run; and,

e. name, address, and telephone number of operator and supervisor.

The record must be compiled and maintained in accordance with the time(s) and location(s) specified in Condition 17.

6. PCB Releases: In the event Transformer Consultants or an authorized facility operator of the Transformer Consultants mobile unit believes, or has reason to believe, that a release of PCBs at any level has or might have occurred from the unit during processing, the facility operator must inform the appropriate EPA region by telephone within two (2) regular business hours. Cleanup begins immediately and must comply with the TSCA PCB Spill Cleanup Policy (52 FR 10688, April 2, 1987).

A written report describing the incident must be submitted by the close of business on the regular business day following the incident. No PCBs may be processed in that facility until the release problem has been corrected to the satisfaction of the appropriate EPA region.

7. PCB Spills: Any spills of PCBs or other fluids shall be promptly controlled and cleaned up as provided in the Transformer Consultants Spill Prevention Control and Countermeasure Plan, and in accordance with the TSCA PCB Spill Cleanup Policy (52 FR 10688, April 2, 1987). In addition, a written report describing the spill, operations involved, cleanup actions and changes in operation to prevent such spills in the future must be submitted to the appropriate EPA region within five (5) business days.

PCB spills must be reported in accordance with the PCB spill reporting requirements prescribed under Section 311 of the Clean Water Act for discharges to navigable waters and under the Comprehensive Environmental Response, Compensation, and Liability Act (Superfund) for discharges to other media.

8. Safety and Health: Transformer Consultants must take all necessary precautionary measures to ensure that operation of the Transformer Consultants mobile unit(s) is in compliance with the applicable safety and health standards, as required by Federal, State and local regulations and ordinances. Any lost-time injury occurring as a result of the Transformer Consultants PCB-Gone unit(s) must be reported to the PCB Disposal Site Coordinator in the appropriate EPA region by the next regular business day.

9. Facility Security: The Transformer Consultants mobile unit shall be secured (e.g., fence, alarm system, etc.) at each commercial site to restrict public access to the area.

10. Reporting Requirements: Any reports required by Conditions (7), (8), and (9) are to be submitted by telephone to the appropriate regional PCB Disposal Site Coordinator within the time frame specified. In addition, Transformer Consultants shall file written reports with the Regional Administrator of the appropriate EPA region, and the Director, National Program Chemical Division the Office of Pollution Prevention and Toxic (OPPT) within the time frame specified in the aforementioned conditions.

11. Personnel Training: Transformer Consultants shall be responsible for ensuring that personnel directly involved with the handling or disposal of PCB-contaminated fluid using the Transformer Consultants PCB-Gone units are demonstrably familiar with the general requirements of this approval. At a minimum, this must include;

a. the type of fluid which may be treated using the Transformer Consultants PCB-Gone unit(s), and the upper limit of PCB contamination which may be treated;

b. basic recordkeeping requirements under this approval and the location of records;

c. notification requirements;

d. waste disposal requirements for process and by-product wastes generated during the operation of the Transformer Consultants PCB-Gone units; and,

e. reporting requirements.

In this regard, Transformer Consultants must maintain on-site during the operations of its mobile unit(s) a copy of this approval; the spill prevention and cleanup plan; and sampling and analytical procedures used to determine PCB concentrations in untreated and treated materials.

12. Agency Approvals/Permits: Prior to commencing operations, Transformer Consultants must obtain any necessary Federal, State or local permits or approvals. During the course of operations,

Transformer Consultants shall comply with all conditions and requirements of such permits or approvals. Copies of such permits should be forwarded to the Chief, Fibers and Organics Branch (7404) EPA Headquarters.

13. Mobile Unit Malfunction/Breakdown: If the quality control testing, as described in Condition 3, reveals that feedstock cannot be successfully processed in the PCB-Gone unit and Transformer Consultants must resort to the condition "or the fluid must be handled as if it contained PCBs at the level of the original fluid," then Transformer Consultants must notify the EPA Regional PCB Disposal Coordinator prior to moving the Transformer Consultants unit off site. If repeated incidence of process failure occurs, the affected unit must cease operation and Transformer Consultants must notify the Chief, Fibers and Organics Branch on (202) 382-3933, as well as the Regional coordinator during the next business day, and file a written report within seven (7) days. Repeated failures are signs of process malfunction and must be reported so that EPA is able to maintain accounting of working commercial units. The affected unit shall not resume operation until the problem has been corrected to the satisfaction of the Chief, Fibers and Organics Branch. Units which have been decommissioned must also be reported immediately to the Chief, Fibers and Organics Branch and the Regional PCB Coordinator.

14. Equipment Transport: Untreated PCB fluids may not be transported off-site on the Transformer Consultants mobile unit. PCB-contaminated equipment (i.e., reactors, tanks, etc.) on the mobile unit may be transported off-site, in accordance with 40 CFR Section 761.40 and the U.S. Department of Transportation (USDOT) requirements of Title 49 part 172. Such requirements include placarding the mobile facility and labeling all PCBs. Transformer Consultants must comply with placarding vehicles requirements unless:

a. The feed hoses and pipes are decontaminated prior to transporting the Transformer Consultants unit from the site, rinsing with clean solvent three times; or

b. The hoses connected to transformers or tanks, i.e, the incoming and outgoing hoses, may be joined together, and the oil pumped through the reactor loop until all the oil in the hoses has been treated.

15. Financial Assurance: Transformer Consultants shall incorporate financial assurance of closure and liability coverage provisions into its closure plan. These provisions must be equivalent to those specified in 40 CFR Part 264, Subpart H of the Resource Conservation and Recovery Act (RCRA), and provide funds for:

a. proper closure of the mobile PCB disposal units and support operations; and

b. compensating others for bodily injury and property damage caused by accidents arising from operations of the mobile disposal units.

Transformer Consultants must file with the Director, National Program Chemical Division Administrator documentation of compliance with these requirements. Transformer Consultants must submit annual updates to the Director, National Program Chemical Division of the financial assurance of closure and liability coverage provision described herein.

16. Recordkeeping: Transformer Consultants must develop and maintain the following records:

a. the name and address of each client whose MODEF or other oil was processed by the Transformer Consultants PCB-Gone units;

b. the date such service was performed;

c. an identification of the Transformer Consultants PCB-Gone unit performing the service;

d. the amount of MODEF or other oil processed;

e. a copy of the gas chromatogram from the tests required by Condition (2) and (4);

f. the method of disposal and location of the disposal facility for each waste as described in condition 6(b); and

g. a summary of the total number of gallons of PCB-contaminated fluid processed through the Transformer Consultants PCB-Gone unit during the previous calendar year.

The documents must be compiled within 60 days of the treatment date, must be kept at one centralized location, and must be made available for inspection by authorized representatives of EPA. Such documents shall be maintained for at least five years. If Transformer Consultants terminates business, these records or their copies must be submitted to the Director, National Program Chemical Division of OPPT.

In addition, Transformer Consultants must maintain, aboard the mobile unit, a record of the PCB disposal services performed by the unit during the previous month. These records must be available for inspection by authorized representatives of EPA.

17. Ownership Transfer: Transformer Consultants must notify EPA at least 30 days before transferring ownership of the Transformer Consultants PCB-Gone unit(s). Transformer Consultants must also submit to EPA, at least 30 days before such transfer, a notarized affidavit signed by the transferee which states that the

transferee will abide by Transformer Consultants's EPA approval. Within thirty days of receiving such notification and affidavit, EPA will issue an amended approval substituting the transferee's name for Transformer Consultants's name, or may require the transferee to apply for a new PCB disposal approval. In the latter case, the transferee must abide by Transformer Consultants's approval until EPA issues the new approval to the transferee. Should Transformer Consultants fail to provide EPA with the required written documentation of sale or transfer and/or to provide this documentation within the specified time frame, this permit shall be null and void.

18. Additional Unit(s): Transformer Consultants must file a written pre-operation report with the Director, National Program Chemical Division within thirty (30) days from the date of manufacture of each additional Transformer Consultants mobile unit which is to be operated in the United States. This report should contain the following information:

a. date of manufacture of the unit;

b. identification and/or serial number of the new Transformer Consultants mobile unit;

c. certification by an independent, registered professional engineer to the effect that the Transformer Consultants mobile unit is substantially identical to the original demonstrated unit(s) in terms of engineering design, hardware, process capacity, quality and workmanship;

d. certification by the chief executive officer, division vice president or general manager of Transformer Consultants signifying that the Transformer Consultants mobile unit construction has been completed in such manner; and

e. a list of all nonsubstantive changes made to the design and construction of the new Transformer Consultants mobile unit which are not identical to the original Transformer Consultants mobile unit.

19. Process/Equipment Modifications: No major modifications may be made to the Transformer Consultants mobile unit(s) design, as described in the application and demonstration plan for this approval, without written authorization of the Director, National Program Chemical Division. For the purpose of this approval, "major modification" shall be defined as any change to capacity, design, efficiency, waste type, or any other changes affecting overall performance or environmental impact.

20. PCB Regulations Compliance: Transformer Consultants shall comply with all applicable requirements of the Federal PCB Regulation, 40 CFR Part 761, in the operation of the mobile PCB unit(s). Particular note should be given to:

a. 40 CFR, section 761.65 - storage for disposal;

b. 40 CFR, section 761.79 - decontamination; and

c. 40 CFR, section 761.180 - records and monitoring.

21. Permit Severability: The conditions of this approval are severable, and if any provision of this approval or any application of any provision is held invalid, the remainder of this approval shall not be affected thereby.

22. Permit Effective Date: This approval shall expire on December 31, 1997. For an approval renewal, EPA may require additional information and/or testing of the Transformer Consultants PCB-Gone unit(s). In order to continue the effectiveness of this approval pending EPA action on reissuance, Transformer Consultants must submit a renewal request letter to EPA at least 90 days, but not more than 180 days, prior to the expiration date of this approval.

APPROVAL

1. Approval to dispose of PCBs is hereby granted to Transformer Consultants, Division of S. D. Myers, Incorporated of Tallmadge, Ohio, subject to the conditions expressed herein and consistent with the materials and data included in the permit application filed by the company. EPA reserves the right to impose additional conditions when it has reason to believe that the continued operation of the Transformer Consultants' mobile unit(s) presents an unreasonable risk to public health or the environment, new information requires changes, or EPA issues new regulations or standards for issuing permits.

Any departure from the conditions of this approval or the terms expressed in the application must receive prior written authorization of the Director of the National Program Chemical Division. In this context, "application" shall be defined as all data and materials which have been received by this Agency from Transformer Consultants regarding Transformer Consultants' PCB-Gone process.

2. This approval to dispose of PCBs does not relieve Transformer Consultants of the responsibility to comply with all applicable Federal, State and local regulations. Violations of any applicable Federal regulations will be subject to enforcement action, which may include termination of this approval. This approval may be suspended or terminated at any time for failure to comply with the terms and conditions herein, or for any other reasons which the Director of the National Program Chemical Division deems necessary to protect the public health and the environment.

3. Transformer Consultants is responsible for the actions of any authorized Transformer Consultants' process employees, when those actions are within the scope of operating or moving the process, and shall assume full responsibility for compliance with all applicable Federal, State and local laws and regulations including, but not limited to, any advance or emergency notification and accident reporting requirements.

4. EPA reserves the right for its employees or agents to inspect Transformer Consultants' PCB disposal activities at any location or reasonable time.

_____
Date

_____
John W. Melone, Director
National Program Chemical Division

Appendix 1

BACKGROUND

Section 6(e)(1)(A) of the Toxic Substances Control Act (TSCA) requires that EPA promulgate rules for the disposal of polychlorinated biphenyls (PCBs). The rules implementing section 6(e)(1)(A) were published in the Federal Register of May 31, 1979 (44 FR 31514) and recodified in the Federal Register of May 6, 1982 (47 FR 19527). Those rules require, among other things, that various types of PCBs and PCB Articles be disposed of in EPA-approved landfills (40 CFR 761.75), incinerators (40 CFR 761.70), high efficiency boilers (40 CFR 761.60), or by alternative methods (40 CFR 761.60(e)) that demonstrate a level of performance equivalent to EPA-approved incinerators or high efficiency boilers. The May 31, 1979 Federal Register also designated Regional Administrators as the approval authority for PCB disposal facilities.

On March 30, 1983, EPA issued a procedural rule amendment to the PCB rule (48 FR 13185). This procedural rule change transferred the review and approval authority of mobile and other PCB disposal facilities that are used in more than one region to the Office of Prevention Pesticides and Toxic Substances (OPPTS). The purpose of the amendment is to eliminate duplication of effort in the regional offices and to unify the Agency's approach to PCB disposal. The amendment gives the Assistant Administrator authority to issue nationwide approvals (i.e., approvals which will be effective in all ten EPA regions) to mobile and other PCB disposal facilities that are used in more than one region.

Transformer Consultants submitted a formal application and test plan to EPA for nationwide approval to treat mineral oil dielectric fluid (MODEF) containing PCBs on December 3, 1984. The demonstration test plan was approved by the Director of the Office of Pollution Prevention and Toxic on May 9, 1985, and Transformer Consultants commenced the trial demonstration at the Transformer Consultants' facility in Stow, Ohio on May 13, 1985. EPA personnel witnessed the demonstration to verify Transformer Consultants' on-site chemical analysis of the treated MODEF and to obtain split samples for subsequent analysis and verification. Transformer Consultants completed the demonstration on May 7, 1985.

Transformer Consultants' process was redemonstrated to EPA representatives on September 5-6, 1985 at the Transformer Consultants' facility at Stow, Ohio. EPA personnel witnessed the redemonstration to verify Transformer Consultants' on-site chemical analysis of the treated MODEF and to obtain split samples of all applicable waste streams for subsequent analysis and verification. A single proprietary reagent was used for the purpose of this redemonstration. For this reason, and at Transformer Consultants' request, Transformer Consultants is approved to use only this reagent.

EPA required Transformer Consultants to perform a demonstration for the renewal of the PCB Disposal Approval which expires on August 26, 1988. With no modification to the existing permit proposed, Transformer Consultants was authorized to conduct their demonstration during a commercial operation. On June 9 and 10, 1988, EPA staff observed processing of transformer dielectric fluid through the Transformer Consultant mobile PCB destruction unit and verified chemical analysis of the on-site laboratory. Split samples of the initial transformer fluid, processed fluid and waste generated by the mobile unit were collected for analytical confirmation by Midwest Research Institute (MRI).

Transformer Consultants again demonstrated the PCB-Gone process during the week of August 2, 1993 at the Vanalco aluminum plant in Vancouver, Washington October 1994. Samples of the spent reagent indicated PCB content greater than 2 ppm PCBs. The company provided analytical data of the spent reagent analyzed in the company mobile laboratory and in the company laboratory in Tallmadge, Ohio. The EPA contract laboratory quantified chromatographic peaks in the PCB retention time window greater than 2 $\mu g/g$. The Transformer Consultant laboratories only reported PCBs for the tetra and penta homologs. All three laboratories, the EPA contract laboratory and the two Transformer Consultants laboratories, agreed that the tetra-PCBs were below 2 $\mu g/g$. However, the EPA laboratory found PCBs in greater concentration than 2 ppm in homologs other than the tetra-PCBs. Therefore, EPA considers the spent reagent to be TSCA-regulated for disposal.

FINDINGS

1. Transformer Consultants, Division of S. D. Myers, Incorporated, of Tallmadge, Ohio is the sole operator of the chemical destruction process which is called the "PCB-Gone" process. Transformer Consultants' PCB-Gone process chemically destroys polychlorinated biphenyls (PCBs) in mineral oil dielectric fluid (MODEF).

2. In May 1985 Transformer Consultants demonstrated the PCB-Gone process at Stow, Ohio. The company mixed MODEF containing PCBs with one of two proprietary reagents which remove the chlorine atoms from the chlorinated biphenyl molecules. This dechlorination process produces inorganic chloride, chlorinated aryl polyglycols, non-chlorinated aromatic compounds, and caustic. These materials are separated from the MODEF, and the detoxified fluid is returned to on-site transformers or bulk containers. The exact description of the method and equipment to be used is on file at EPA Headquarters.

Transformer Consultants recorded and retained written and graphic verification of the analyses and submitted verification to EPA. Transformer Consultants provided analytical data and samples of treated MODEF to EPA throughout the course of the demonstration.

Test results from the May 1985 demonstration were submitted to EPA in a test report dated June 28, 1985. These test results demonstrate that Transformer Consultants' process is capable of destroying PCBs in MODEF, but that the process results in a waste centrifuge sludge, spent fullers earth, liquid from mist eliminator, and pre-Fullers Earth cartridge filter with PCB levels above the limit of detection (LOD) (greater than 2 ppm per resolvable gas chromatographic peak). Transformer Consultants asserted the waste streams containing 2 ppm PCBs or greater resulted from the use of <u>one</u> proprietary reagent and not the other.

Therefore, Transformer Consultants redemonstrated their process using only a single proprietary reagent on September 5-6, 1985. At the conclusion of the redemonstration, Transformer Consultants submitted test results which demonstrate that the Transformer Consultants process using the single proprietary reagent is capable of destroying PCBs in MODEF and reducing the PCB concentration in the spent fullers earth to non-detectable levels (below 2 ppm per resolvable gas chromatographic PCB peak, as calculated by comparison to an external standard). Analysis of the split samples indicates that the process using the single proprietary reagent destroys PCBs in MODEF, and in all other waste streams except the waste centrifuge sludge. The centrifuge sludge contained PCB levels above the limit of detection (LOD) (greater than 2 ppm per resolvable gas chromatographic peak).

3. 1988 Demonstration for Renewal: In order to renew the TSCA operating permit at expiration, Transformer Consultants was required to demonstrate. Transformer Consultants demonstrated the PCB-Gone process during a commercial operation. On June 9 and 10, 1988, EPA witnessed the processing of transformer dielectric fluid and to verified the chemical analysis of the on-site laboratory. Samples of the initial transformer fluid, processed fluid and waste generated by the mobile unit were collected for analytical confirmation by Midwest Research Institute. Results of chemical analysis are presented in Appendix 3.

Analysis by MRI of the split sample collected from the spent reagent stream (S/N 10666, Appendix 4) indicate residual PCBs in the reagent. In comparison, analysis by Transformer Consultants' on-site laboratory revealed PCB levels less than 2 ppm in the reagent. MRI analysis were performed using the Hall Electrolytic Conductivity Detector (HECD) while the Transformer Consultants tests were conducted with a packed column electron capture detector (PGC/ECD). Since the HECD resolves and distinguishes chloride ions specifically and the PGC/ECD necessarily does not, EPA must presume that spent reagent contains detectable concentration of PCBs. PCBs are detected through release of chloride ions upon injection into gas chromatographic instruments (HECD and PGC/ECD). As a result, Transformer Consultants may reuse the spent reagent in operations subsequent performed; however, upon termination of useful life, the spent reagent must be disposed of by incineration or landfilled in EPA-approved facilities for PCB wastes.

4. 1993 Demonstration for Renewal: Transformer Consultants again demonstrated the PCB-Gone process during the week of August 2, 1993 at the Vanalco aluminum plant in Vancouver, Washington. Once again, samples of the spent reagent indicated PCB content greater than 2 ppm PCBs. The company provided analytical data of the spent reagent analyzed in the company mobile laboratory and in the company laboratory in Tallmadge, Ohio. The EPA contract laboratory quantified chromatographic peaks in the PCB retention time window greater than 2 $\mu g/g$. The Transformer Consultant laboratories only reported PCBs for the tetra and penta homologs. All three laboratories, the EPA contract laboratory and the two Transformer Consultants laboratories, agreed that the tetra-PCBs were below 2 $\mu g/g$. However, the EPA laboratory found PCBs in greater concentration than 2 ppm in the penta-, hexa- and hepta-homologs. Discussion of this issue is presented in Appendix 4.

The demonstration sample analysis from split sampling are summarized below. Results for the Transformer Consultants samples are those from the mobile field laboratory.

Bar Code Consultants	Sample Number	Sample Description	PCB as Aroclor 1260 Concentration, ppm EPA	Transformer
30-0253	93-1	Starting oil	56.4[a]	74[c]
30-0254	93-2	Centrifuge sludge	< 2	nd[d]
30-0255	93-3	Spent reagent	≈200[b]	0.37[d]
30-0256	93-4	Spent Fullers Earth	3.10[b]	0.31[d]
30-0257	93-5	Final oil out	< 2	0.13[d]

[a] Average from two duplicate analysis
[b] Best fitted to Aroclor 1260 pattern
[c] Aroclor 1260 - 71 ppm; Aroclor 1242 - 3 ppm
[d] Analyzed only for Tetra-PCB homolog

5. Transformer Consultants' process is a totally enclosed process that is capable of treating PCB-contaminated MODEF on-site through the use of mobile units. The totally enclosed process, which is designed with specific features to prevent and control spills on site, minimizes the potential for exposure to workers and the general population. In addition, the on-site treatment capability of Transformer Consultants' mobile unit virtually eliminates the potential risk of a spill of PCB materials during transportation.

6. Transformer Consultants' process can operate in either a batch or continuous mode. The process uses a sufficient amount of reagent to treat a fixed quantity of PCB-contaminated MODEF. The contaminated MODEF is processed in three (3) 100-gallon reaction vessels. Treatment will continue in the vessels until Transformer Consultants, through its on-site analysis, confirms that the concentration of PCBs in the reaction vessels has been reduced to a nondetectable level (below 2 ppm per resolvable gas chromatographic PCB peak, as calculated by comparison to an external standard, one PCB congener per homolog, peak having the nearest retention time to each appropriate PCB peak to be quantified).

7. Transformer Consultants' process, as designed, does not emit harmful materials into the environment. Solid wastes are produced in the form of spent filter media and sludge. These solid wastes contain non-chlorinated organic substances, inorganic chlorides, water, and a small amount of treated MODEF. This composition does not pose a risk of injury to human health or the environment. Moreover, the non-chlorinated substances are not soluble or have low solubilities in common organic solvents.

8. In the event of a malfunction during treatment, Transformer Consultants' mobile unit is designed to allow PCB-containing fluid to be returned to the original transformer or tank. This fluid can then be treated again.

9. Transformer Consultants must develop and file with EPA a closure plan for terminating Transformer Consultants' mobile units. This plan must include the decontamination and disposal of PCB-contaminated equipment or process materials, and testing of the equipment before it is removed from service to assure that no PCBs are present.

10. Transformer Consultants has provided EPA with a description of its training program for Transformer Consultants' process operators and technicians. This program is intended to help ensure that operation of Transformer Consultants' mobile unit(s) is in compliance with applicable safety and health standards. The training program, as described, encompasses:

a. safety, recordkeeping, and sampling and analysis;

b. operational procedures for using, inspecting, repairing and replacing Transformer Consultants' mobile facility equipment, including the monitoring and control system; and

c. spill prevention, cleanup and emergency response procedures.

11. Transformer Consultants' process has a level of performance equivalent to that of the required thermal destruction methods (incinerators and high efficiency boilers). In the Preamble to the PCB Ban Rule, EPA expressed the expectation that approved incinerators (§761.70) would achieve a destruction efficiency of 99.9999% and that high efficiency boilers (§761.60), which may be used to destroy PCBs in concentrations up to 500 ppm, would achieve a destruction efficiency of 99.9% or greater. While those percentages provide general guidance to determine the approximate destruction efficiency goals for alternate PCB disposal methods under 40 CFR 761.60(e), other factors may be considered in the determination of equivalency. For example, the mathematically calculated PCB destruction efficiency of Transformer Consultants' process may be less than that achieved by an EPA-approved incinerator or high efficiency boiler, because the practical limit of detection of PCBs in oils is 2 ppm. However, this is offset by the fact that there are no detectable PCBs in the treated fluid at a detection limit of 2 ppm per resolvable gas chromatographic peak, the absence of detectable PCB emissions, lack of worker exposure to PCBs, reduced risks associated with the virtual elimination of PCB storage and transportation. Additionally, waste materials which have been demonstrated to contain detectable PCBs must be disposed of as if they contained PCBs at the concentration measured in the original influent oil.

12. Pursuant to 40 CFR 761.60(e) and the previous findings, EPA finds that Transformer Consultants' process using the single proprietary reagent (when operated under the conditions described below) is equivalent in performance to an EPA-approved incinerator or high efficiency boiler and that it does not pose

APPENDIX 3

SUMMARY OF DEMONSTRATION BY TRANSFORMER CONSULTANTS
TO RENEW TSCA OPERATING PERMIT
June 9 and 10, 1988

The demonstration to renew the TSCA PCB Disposal Operating Permit by the Transformer Consultants division of S.D. Myers, Tallmadge, Ohio was performed during a commercial operation. EPA authorized the "mini-demonstration" because the Transformer Consultants PCB-Gone process had been audited several times by the EPA Regional Offices, as well as EPA Headquarters during the effective period of the TSCA Permit. The demonstration was conducted with PCB-Gone Rig #7 at a customer's site - Memphis Light, Gas and Water in Memphis, Tennessee.

Contents from a 9,800 gal transformer was processed at a rate of about 300 gallons an hour through the PCB-Gone equipment into a tanker. Samples were collected periodically throughout the operation. The PCB-Gone on-site support laboratory was audited by EPA personnel and was found satisfactory. Results of the sample analysis are presented.

Transformer Consultants Analytical Results

Sample	PCB Content, ppm
Starting Fluid	551
Outgoing Fluid (Treated Oil)	< 2
Fullers Earth	< 2
Final In	8.4
Sludge	(not tested)
Spent Reagent*	< 2
Finished Reagent	< 2

* Split with EPA (S/N 10666)

MRI ANALYTICAL RESULTS

Sample No.	Date Sampled (time)	Description	PCB Concentration, ppm
10661	6/9/88 (1047)	Feed MODEF	520
10664	6/9/88 (2005)	Feed MODEF	520
10662	6/9/88 (1047)	Treated MODEF	< 2
10665	6/9/88 (2005)	Treated MODEF	< 2
10669	6/10/88 (1000)	Treated MODEF	< 2
10663	6/9/88 (1130)	Spent Reagent	< 2
10666	6/9/88 (2005)	Spent Reagent	> 2 (penta, hepta)
10670	6/10/88 (1020)	Spent Reagent	> 2 (5 homologs)
10667	6/10/88 (0905)	Spent Fullers Earth	< 2
10668	6/10/88 (0905)	Centrifuge Sludge	> 2 (5 homologs)

APPENDIX 4

SUMMARY OF THE TRANSFORMER CONSULTANTS DEMONSTRATION FOR PCB DISPOSAL PERMIT RENEWAL VANALCO ALUMINUM PLANT, VANCOUVER, WASHINGTON August 2 through 7, 1993

Transformer Consultants demonstrated the PCB disposal process, PCB-Gone, during the week of August 2, 1993 at the Vanalco aluminum plant in Vancouver, Washington. The company had planned on treating two 5,600 gallons transformers within a span of four days. However, the Vanalco plant is currently operating at full capacity and could not shut down the transformers. Therefore, Transformer Consultants could not perform the operations on a batch basis, but completed the operations in a closed loop, treating and recycling the transformer oil until the oil exiting the transformer reached below 10 ppm PCBs. The PCB-Gone process treated each transformer in five-and-a-half days. EPA decided that processing of one transformer was adequate to demonstrate satisfactory performance of the PCB-Gone process for permit renewal.

Analytical results from split samples collected by EPA are compared to analysis from the Transformer Consultants mobile field laboratory (T.C.):

TABLE A4.1 ANALYTICAL RESULT OF SPLIT SAMPLES

Bar Code	Sample Number	Sample Description	PCB Concentration, ppm EPA	T.C.
30-0253	93-1	Starting oil	56.4[a]	74[c]
30-0254	93-2	Centrifuge sludge	< 2	nd[d]
30-0255	93-3	Spent reagent	≈200[b]	0.37[d]
30-0256	93-4	Spent Fullers Earth	3.10[b]	0.31[d]
30-0257	93-5	Final oil out	< 2[b]	0.13[d]

[a] Average from two duplicate analysis
[b] Best fit to Aroclor 1260 pattern
[c] Aroclor 1260 - 71 ppm; Aroclor 1242 - 3 ppm
[d] Analyzed only for Tetra-PCB homolog

The Transformer Consultants mobile laboratory determined the spent reagent to contain 0.37 ppm PCB; however, results from the EPA laboratory indicated concentrations of PCBs about 200 ppm. Figure B-5 displays the chromatogram for the spent reagent. Notice that many peaks in the spent reagent pattern are in the region of those for Aroclor 1260, shown in Figure B-1. Many peaks do not match. These peaks are compared to the peaks of the DCMA (Dry Color Manufacturer Association) standard, (see Figures C-2 and C-5). The non-Aroclor peaks are listed in Table A4.2 for the spent reagent along with other process stream samples.

The sample of Fuller's Earth exhibited some Aroclor 1260 peaks. Table A4.1 gives the EPA result based on Aroclor 1260 standard. Non-Aroclor peaks were compared to the DCMA standards. Those results are listed in Table A4.2. Figure C-6 displays the chromatogram for the Fuller's Earth sample comparing the peaks to that for the DCMA standard in Figure C-2.

In the analysis of the spent reagent and Fuller's Earth, Transformer Consultants quantified only the tetra homolog. The company used a mono-through penta- homolog standard with five congeners representing the five PCB homologs. The chromatograms for the spent reagent and the Fuller's Earth both exhibit peaks with retention times greater than the penta- homolog. More properly, the company should have used the ten homolog standard for PCBs.

However, in analyzing treated oil, because the treated oil rarely contains more than five homologs, the five homolog determination is acceptable. But, this is not to preclude analysis of oil which may contain a congener with a retention time of over 5.04 minutes. Transformer Consultants must determine, as well, peaks occurring at retention times greater than 5.04 minutes.

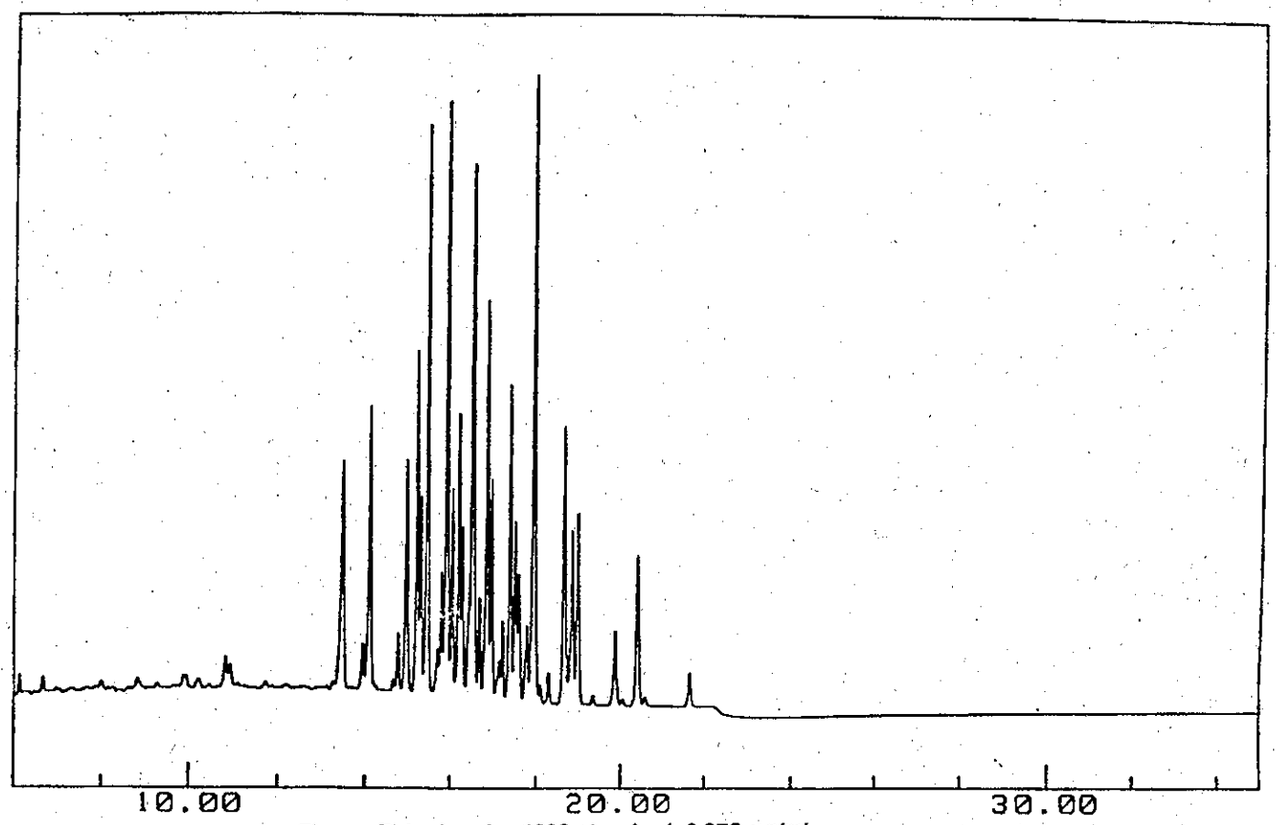
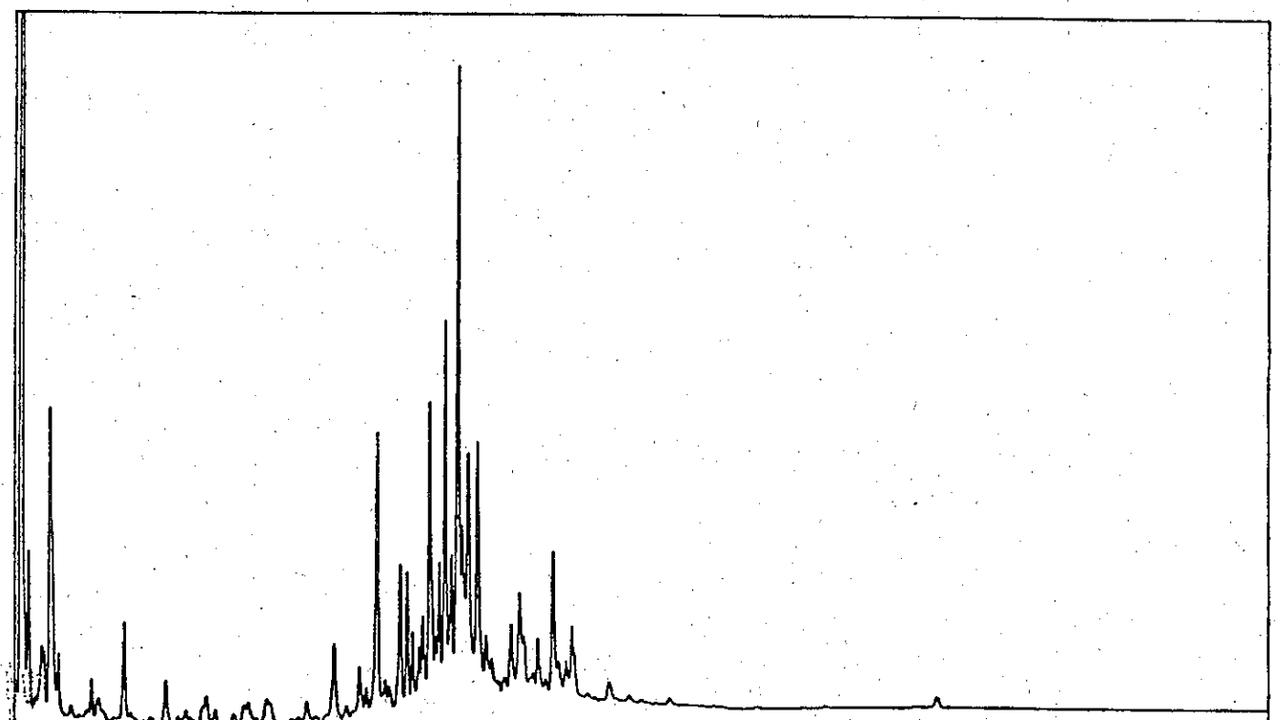


Figure B-1. Aroclor 1260 standard, 2.076 µg/mL.



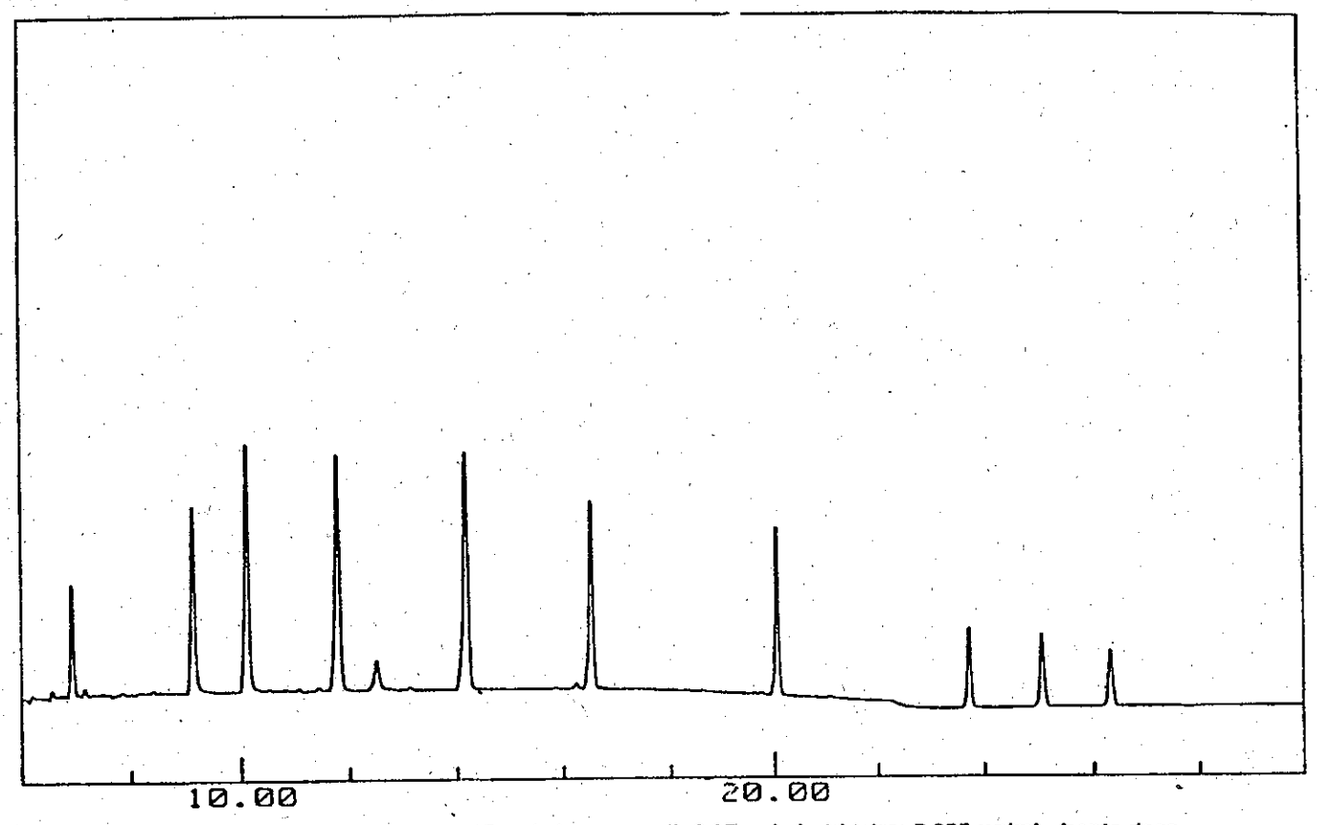


Figure C-2. DCMA IQC standard, 0.05 µg/mL, mono, di; 0.05 µg/mL, tri-tetra; 0.025 µg/mL, hepta-deca.

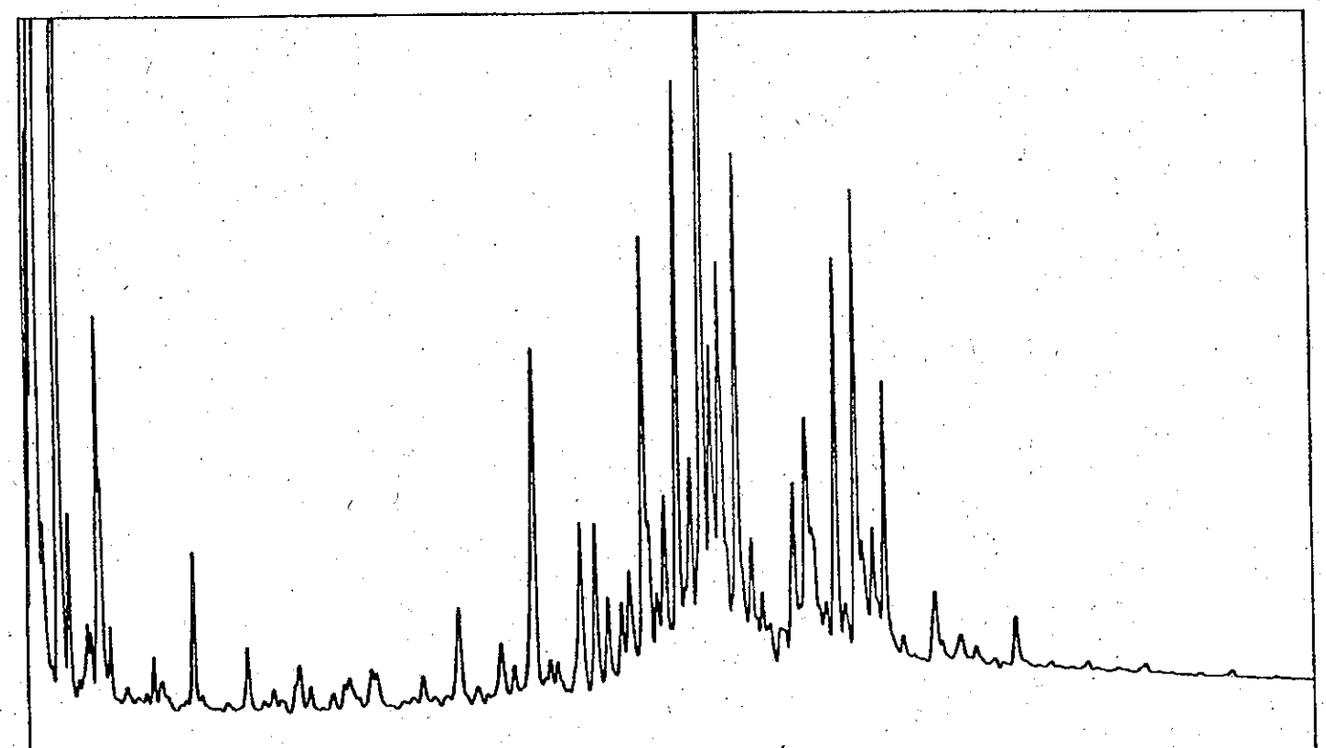


TABLE A4.2 NON-AROCLOR INDIVIDUAL PEAKS, μg/g
COMPARISON OF LABORATORY RESULTS

EPA - EPA contract laboratory
T.C. - Transformer Consultants' Mobile Laboratory
SDM - Transformer Consultants' Central Laboratory

SAMPLE ID	SPENT REAGENT			CENTRIFUGE SLUDGE			FULLERS EARTH			TREATED OIL		
HOMOLOGS	EPA	T.C.	SDM	EPA	T.C.	SDM	EPA	T.C.	SDM	EPA	T.C.	SDM
Mono PCBs	60.0		ND	9.77		ND	>37.5		ND	8.65		?
Mono PCBs	<480			>51.4								
Mono PCBs	51.8			>29.9						—		
Di PCBs	2.12		0.13	>14.9		0.05	>16.2		0.03	7.94		0.11
Di PCBs	9.68			2.43			>13.1					
Di PCBs	9.88			2.21								
Di PCBs	65.2											
Tri PCBs	ND(<2)		0.08	ND		0.02	ND		0.03	ND		0.08
TetraPCBs	ND(<2)	0.37	0.31	ND	ND	0.06	ND	0.31	0.14	ND	0.13	0.23
PentaPCBs	3.6		0.16	ND		0.01	ND		0.11	ND		0.02
Hexa PCBs	29.6			ND			ND			ND		
Hexa PCBs	13.0											
Hexa PCBs	9.25											
Hexa PCBs	3.27											
Hexa PCBs	4.86											
Hexa PCBs	17.0											
Hexa PCBs	6.47											
Hexa PCBs	29.4											
HeptaPCBs	4.07			ND			ND			ND		
HeptaPCBs	41.5											
HeptaPCBs	13.1											
HeptaPCBs	21.7											
HeptaPCBs	21.6											
HeptaPCBs	4.25											
HeptaPCBs	4.02											
HeptaPCBs	21.8											
HeptaPCBs	4.25											
HeptaPCBs	5.76											
Octa PCBs	5.00			2.49			ND			ND		

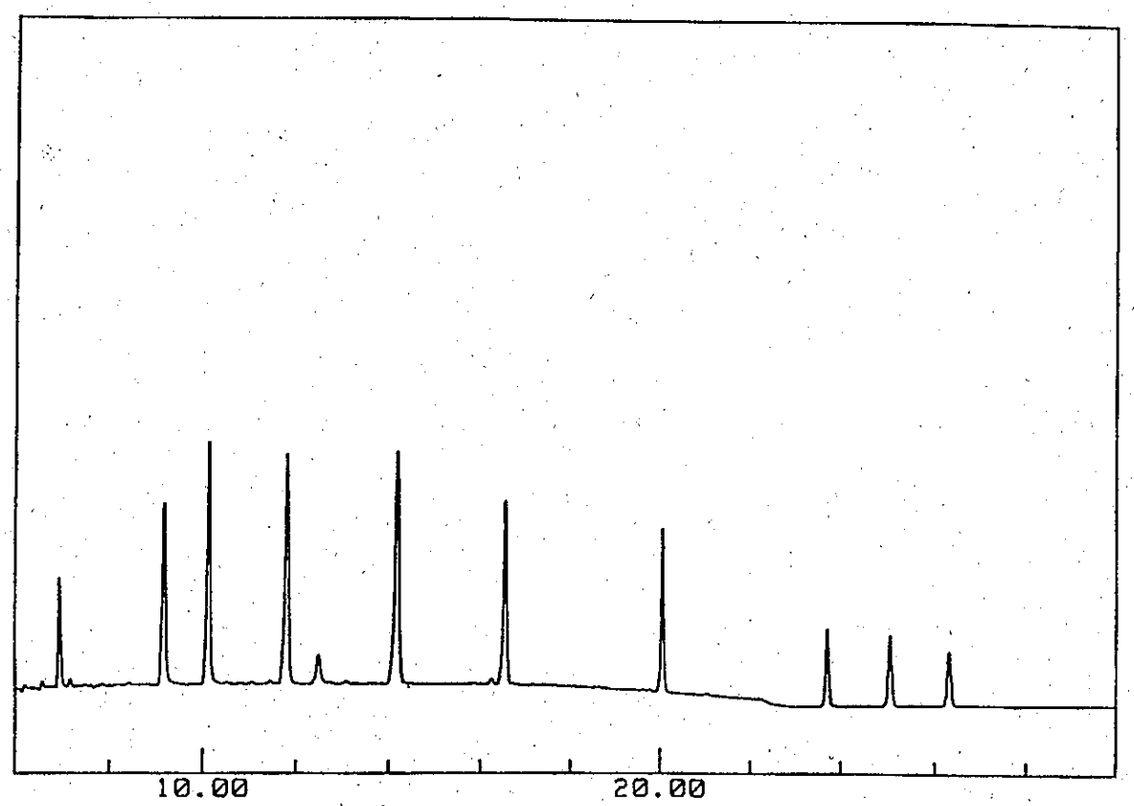
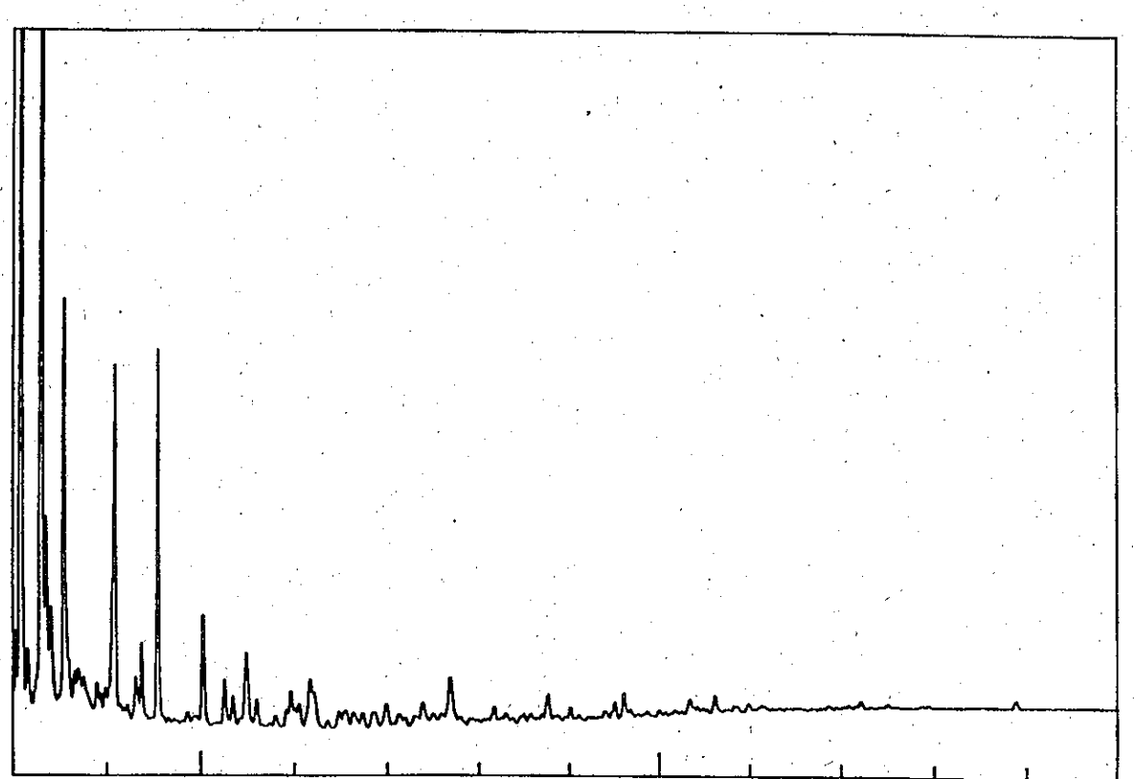


Figure C-2. DCMA IQC standard, 0.05 µg/mL, mono, di; 0.05 µg/mL, tri-tetra; 0.025 µg/mL, hepta-deca.



Appendix 5A

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EXAMPLE THIRTY DAY NOTIFICATION FORM FOR PART A

Company Name, Address, Phone Number, and Contact Person:

Person, Organizational Affiliation/Title, and Phone Number for:

EPA Regional Contact:

State Contact:

Local (Town/City/County) Contact:

Nature of the Disposal Activity:

Kind of PCB Disposal Process:

Kinds of Material Containing PCBs:

Numbers and Sizes of Pieces of Equipment Containing PCBs:

Quantity of Solids and/or Volume of Liquid(s) Containing PCBs:

Concentration(s) of PCBs in the Material Treated:

Location

Street Address or Other Identifier for All Sites:

Telephone Contact and Address for Site Manager:

Time of Processing

Date(s):

Time(s):

****

APPENDIX 5B

TO THE TRANSFORMER CONSULTANTS APPROVAL TO DISPOSE OF POLYCHLORINATED BIPHENYLS

****

SAMPLE TRANSFORMER CONSULTANTS PROCESS TWO WEEK ACTIVITY SCHEDULE FORM

Period Covered:

EPA Location & Region	Most Probable Operating Date	Scheduled Date(s) & Time(s)	No. of Sites	County(s) of Operation or Central Contact Phone No.

Week No. 1:

Week No. 2:

****

APPENDIX 5C

TO THE TRANSFORMER CONSULTANTS APPROVAL TO DISPOSE OF POLYCHLORINATED BIPHENYLS

****

SAMPLE THIRTY DAY NOTIFICATION FORM FOR CONDITION NO. 1

Company Name, Address, Phone Number, and Contact Person:

Person, Organizational Affiliation/Title, and Phone Number for:

EPA Regional Contact:

State Contact:

Local (Town/City/County) Contact:

Nature of the Disposal Activity:

Kind of PCB Disposal Process:

Kinds of Material Containing PCBs:

Numbers and Sizes of Pieces of Equipment Containing PCBs:

Quantity of Solids and/or Volume of Liquid(s) Containing PCBs:

Concentration(s) of PCBs in the Material Treated:

Location

Street Address or Other Identifier for All Sites:

Telephone Contact and Address for Site Manager:

Time of Processing

Date(s):

Time(s):

****

APPENDIX 5D

NOTICE OF INTENT TO OPERATE AND PUBLIC MEETING

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
6TH AND WALNUT STREETS
PHILADELPHIA, PENNSYLVANIA

Date of this notice: **December 26, 1993**
Public Notice No: **TSCA 1002**

The **Company XYZ**, which is located at **12345 Main Street, Anytown, PA 67890** proposes to commence permanent operations for the storage and destruction PCBs wastes. A TSCA permit was granted to **XYZ, Inc.** on **June 1, 1992** under the authority of the Toxic Substances Control Act.

Persons wishing to comment on the intent to commence permanent operation must submit in writing. Written comments must be sent to United States Environmental Protection Agency, **6th and Walnut Streets, Philadelphia, PA 19106**, Attention: **Joe Green (3TS9)** and must be received by EPA on or before **January 25, 1994**.

If the written comments warrant a public meeting, then it will be held by EPA to receive such comments on **February 10, 1994** in the **JFK High School** located at **1 Eagle Way, Chester, PA** at 7:00 p.m.

All comments should address the appropriateness of the decision to grant permanent operations to **XYZ**. All comments must raise ascertainable issues and should be accompanied by all reasonably available arguments, factual grounds and supporting material. It is EPA' intent to limit comments at the meeting to a maximum of five minutes per speaker so persons wishing to participate in the hearing are encouraged to prepare written material to be submitted along with any oral comments.

All written comments received by the above date and all comments received at the meeting will be considered in the formulation of final determination regarding permanent operations. After considering all comments and the requirements and policies in TSCA and its implementing regulations, the EPA Regional Administrator will make a decision regarding permanent operations.

The administrative record, including the application, all data submitted by the applicant, the fact sheet, the approval, maps showing the exact facility locations and comments received and copied at **EPA Region III, 6th & Walnut Streets, Philadelphia, PA 19106**, between the hours of 8:30 a.m. and 4:30 p.m. Monday through Friday. A copying machine will be provided for public use at a charge per page. Any person desiring further information, copies of portion of the administrative record, or an appointment

to review the record should contact **Joe Green** at the above address or call **(215) 597-1234**.

An additional copy of the application, approval and fact sheet will be available for review at the **Pennsylvania Department of Environmental Resources, Solid Waste Division, 123 Main St., Philadelphia, PA 19111.**